Cape Spencer to Beaufort Sea

(1) **Alaska**, the largest of the United States, occupies the NW part of the North American continent. The State is bordered on the E and S by Canada and on the W and N by the Pacific and Arctic Oceans. The northernmost point of Alaska is Point Barrow (71°23'N., 156°28'W.); the westernmost point is Cape Wrangell (52°55'N., 172°26'E.) on Attu Island; and the southernmost point is Nitrof Point (51°13.0'N., 179°07.7'W.), on Amatignak Island. Cape Muzon (54°40'N., 132°41'W.) is on the historic parallel which is the coastal boundary between Alaska and Canada's British Columbia. Cape Muzon is on the N side of Dixon Entrance and is 480 miles NW of Cape Flattery, Washington; between the two United States capes is the coastal area of British Columbia.

(2) Alaska was purchased from Russia in 1867 and became an organized territory of the United States in 1912. By Presidential proclamation of January 3, 1959, Alaska officially became the 49th of the United States. Principal resources are oil, timber, fish, and coal. Alaska has a general ocean coastline of 5,770 nautical miles and a tidal shoreline of 29,462 miles. The State is so huge that its description requires two complete volumes of the National Ocean Service's nine-volume series of United States Coast Pilots.

(3) Coast Pilot 9 deals with the Pacific and Arctic coasts of Alaska from Cape Spencer to Beaufort Sea; general ocean coastline totals 5,520 nautical miles, and tidal shoreline totals 18,377 miles. Included are the Gulf of Alaska coast and islands, the Alaska Peninsula, the Aleutian Islands, and the United States coasts and islands of the Bering Sea, Chukchi Sea, and Beaufort Sea.

(4) Between Cape Spencer and Cape St. Elias, the coast is fairly regular. Along this stretch are Lituya Bay, Yakutat Bay, and Icy Bay. The great Malaspina Glacier comes to within 3 miles of the ocean W of Yakutat Bay.

(5) From Cape St. Elias to Cook Inlet, the characteristic formation is generally rocky; the waters are mostly deep, but there are also great variations in depth. The visible topographic features, such as the mountains and the rugged islands, probably are duplicated underwater.

(6) In Cook Inlet, the characteristic formation is the result of glacial action. The shores are strewn with boulders, some of great size, and soundings indicate the existence underwater of similar boulders, particularly in areas of hard bottom where the boulders have not been buried by silt.

(7) W from Cook Inlet, and throughout the islands off the SE side of the Alaska Peninsula, rock formation is again found. The principal harbors are Kodiak on Kodiak Island, Sand Point in the Shumagin Islands, and King Cove and False Pass on the SE side of the Peninsula.

(8) The Aleutian Islands are rugged and mountainous, with numerous off-lying islets, rocks, and reefs. Some of the larger islands provide more or less sheltered anchorage.

(9) The Bering Sea is characterized in general by shallow waters, with extensive sand and mud flats along the shores, particularly in the approaches to the various bays and rivers. There is little rock formation, and its occurrence, where found, is limited in area.

(10) The Arctic coast is mostly low, especially to the N of Cape Lisburne. The principal landing places are Kotzebue and Barrow.

Disposal Sites and Dumping Grounds

(11) These areas are rarely mentioned in the Coast Pilot, but are shown on the nautical charts. (See Disposal Sites and Dumping Grounds, chapter 1, and charts for limits.)

Aids to navigation

(12) Lights, although infrequent along much of this coast, do mark the important headlands and passages; fog signals are at most of the principal lights. Many of the buoys in the important passages are equipped with radar reflectors, which greatly increase the range at which the buoys may be detected. Many of the aids to navigation in Alaska are seasonal. There are aerolights in Alaska that are useful for navigation purposes, but these should not be confused with marine lights. (See the Light List for a complete description of navigational aids.)

Electronic navigation

(13) Radar, loran, radar beacons (Racons), GPS/dGPS, and the radio direction finder have given the navigator means of determining his position in any weather. The mariner should, however, appreciate the limitations

and sources of error of the various systems. Radar should be properly calibrated and tuned. Radio direction finders must be calibrated, and the operator should become experienced in the use of the equipment. Radar, radio direction finder, GPS/dGPS, and loran equipment are subject to malfunctions which may not be immediately apparent to the operator, and there are conditions when loran or radio signals may be subject to error when the shipboard receiver is operating properly. Soundings should always be taken in critical places, and the position should be checked by visual bearings when possible.

(14) Navigation by **radar** is facilitated along the coast of Alaska and in the various passages by the generally high relief of the coastline. The rugged coast provides many points, headland, large offshore rocks and islands which give accurate radar ranges and bearings. Radar ranges are more accurate than radar bearings. When two or more suitable targets can be positively identified, a better fix is obtained by radar ranges alone than by radar ranges and bearings. When visibility permits, visual bearings should always be taken. When positioning by a bearing and a radar range of a single object, the identification of the target must be positive. Floating aids to navigation should not be used as targets for fixing position.

(15) U.S. Coast Guard radiobeacons are limited in the area of this Coast Pilot. However, commercial radio stations can be used instead. Radio direction finder equipment is subject to several kinds of errors. Bearings obtained at twilight or at night or bearings which are almost parallel to the coast should be accepted with reservations, due to "night effect" and to the distortion of the radio waves if traveling overland. Other sources of error in the system may be avoided by the proper calibration of the shipboard receiver.

(16) **Loran** provides good coverage from several stations along the North Pacific Ocean. These stations provide vessels generally good fixes when sailing along the coast or approaching the coast from seaward.

(17) The frequent occurrence of fog along this coast makes radar an invaluable aid in detecting other traffic and obtaining a line of position and/or fix. Bridge-to-bridge radio communication (VHF-FM) is another useful aid, regardless of weather, in waters where maneuvering room is limited or restricted. The use of VHF-FM equipment for short-range communication is increasing, and so are the number of vessels equipped with this equipment. The primary advantages of this radio system are its line-of-sight characteristic and relative freedom from static interference.

COLREGS Demarcation Lines

(18) The International Regulations for Preventing Collisions at Sea, 1972 (72 COLREGS) apply on all the sounds, bays, harbors, and inlets of Alaska. (See **Part 80,** chapter 2.)

Shipping Safety Fairways

(19) A system of shipping safety fairways has been established in the approaches to Prince William Sound and through Unimak Pass. The Prince William Sound Safety Fairway, extending SE from Hinchinbrook Entrance, has separate inbound and outbound traffic lanes that merge in the NW part. The Unimak Pass Safety Fairway is comprised of an E-W fairway with a connecting N-S fairway in the W section. (See **166.100 through 166.110 and 166.400**, chapter 2, for limits and regulations.)

Ports and Waterways Safety

(20) (See **Part 160**, chapter 2, for regulations governing vessel operations and requirements for notification of arrivals, departures, hazardous conditions, and certain dangerous cargoes to the Captain of the Port.)

(21) A **Traffic Separation Scheme (Traffic Lanes)** has been established in Prince William Sound. (See chapter 4, for details.)

(22) A **Vessel Traffic Service (VTS)** has been established in the Prince William Sound area. The Service has been established to prevent collisions and groundings, and to protect the navigable waters from environmental harm.

(23) The Vessel Traffic Service provides for a **Vessel Traffic Center (VTC)** that regulates the routing and movement of vessels by radar surveillance, movement reports of vessels, VHF-FM radio communications, and specific reporting points. The system consists of traffic lanes, a separation zone, and reporting points.

(24) The Service is mandatory. (See **161.301** through **161.387,** chapter 2, for rules and regulations, and chapter 4 for details.)

Anchorages

(25) Many of the harbors in the mountainous areas are subject to violent williwaws. These severe gusts may come from any direction and should be considered when selecting an anchorage.

Dangers

(26) Offshore drilling and exploration operations are increasing in the waters of Alaska, especially in Cook Inlet.

(27) Obstructions in these waters consist of submerged wells and oil well structures (platforms), including

appurtenances thereto, such as mooring piles, anchor and mooring buoys, pipes, and stakes.

(28) In general, the oil well structures (platforms), depending on their size, depth of water in which located, proximity of vessel routes, nature and amount of vessel traffic, and the effect of background lighting, may be marked in one of the following ways:

(29) Quick flashing white light(s) visible at least 5 miles: fog signal sounded when visibility is less than 5 miles.

(30) Quick flashing white light(s) visible at least 3 miles: fog signal sounded when visibility is less than 3 miles.

(31) Quick flashing white or red lights visible at least 1 mile: may or may not be equipped with fog signal.

(32) Structures on or adjacent to the edges of navigable channels and fairways, regardless of location, may be required to display lights and fog signals for the safety of navigation.

(33) Associated structures within 100 yards of the main structure, regardless of location, are not normally lighted but are marked with red or white retro-reflective material. Mariners are cautioned that uncharted submerged pipelines and cables may exist in the vicinity of these structures, or between such structures and the shore.

(34) During construction of a well or during drilling operations, and until such time as the platform is capable of supporting the required aids, fixed white lights on the attending vessel or drilling rig may be shown in lieu of the required quick flashing lights on the structure. The attending vessel's foghorn may also be used as a substitute.

(35) Submerged wells may or may not be marked depending on their location and depth of water over them.

(36) All obstruction lights and fog signals, used to mark the various structures, are operated as privately maintained aids to navigation. (See **33 CFR 67**, for detailed regulations for the marking of offshore structures.)

(37) Information concerning the establishment, change, or discontinuance of offshore oil-well structures and their appurtenances is published in the Local Notice to Mariners or by Broadcast Notice. Additional information may also be obtained from the Coast Guard Commander. Mariners are advised to navigate with caution in the vicinity of these structures and in those waters where oil exploration is in progress, and to use the latest and largest scale chart of the area.

(38) During the continuing program of establishing, changing, and discontinuing oil-well structures, special caution should be exercised when navigating the inshore and offshore waters of the affected areas in order to avoid collision with any of the structures.

(39) Information concerning seismographic operations is not published in Notice to Mariners unless such operations create a menace to navigation in waters used by general navigation. Where seismographic operations are being conducted, casings (pipes), buoys, stakes, and detectors are installed. Casings are marked with flags by day and fixed red lights by night; buoys are colored international orange and white horizontal bands; and stakes are marked with flags.

Pipelaying barges

(40) With the increased number of pipeline laying operations, operators of all types of vessels should be aware of the dangers of passing close aboard, close ahead, or close astern of a jetbarge or pipelaying barge. Pipelaying barges and jetbarges usually move at 0.5 knot or less and have anchors which extend out about 3,500 to 5,000 feet in all directions and which may be marked by lighted anchor buoys. The exposed pipeline behind the pipelaying barge and the area in the vicinity of anchors are hazardous to navigation and should be avoided. The pipeline and anchor cables also represent a submerged hazard to navigation. It is suggested, if safe navigation permits, for all types of vessels to pass well ahead of the pipelaying barge or well astern of the jetbarge. The pipelaying barge, jetbarge, and attending vessels may be contacted on VHF-FM channel 16 for passage instructions.

(41) **Kelp** grows on nearly every danger with a rocky bottom and is particularly heavy in many places in the Aleutian Islands. It will be seen on the surface of the water during the summer and autumn; during the winter and spring it is not always to be seen, especially where it is exposed to a heavy sea. Many rocks are not marked by kelp, because a heavy sea will occasionally tear it away and a moderate current will draw it under water so that it will not be seen. When passing on the side of a kelp patch from which the stems stream away with the current, care should be taken to give it a good berth. Dead, detached kelp, floats on the water curled in masses, while live kelp, attached to rocks, streams away level with the surface. Live kelp is usually an indication of depths less than 10 fathoms.

Logs and deadheads

(42) Mariners are cautioned that a large number of logs and deadheads are adrift in the navigable waters of Alaska at all times particularly after storms and unusually high tides. Mariners are urged to be alert for the presences of such logs and deadheads, as they constitute a serious menace to craft of small and moderate size.

(43) **Danger zones** and **Restricted areas** are along the Alaskan coast. (See **Part 334**, chapter 2, for limits and regulations.)

Tides

(44) The greatest diurnal range of tide in the United States is the 33.3 feet in Turnagain Arm, Cook Inlet. In contrast, Point Barrow has a diurnal range of only 0.4 foot. (See the Tide Tables for more detailed information.)

(45) **Caution**.–In using the Tide Tables, high or low water should not be confused with slack water. For ocean stations there is usually little difference between the time of high or low water and the beginning of ebb or flood currents; but for places in narrow channels, landlocked harbors, or on tidal rivers the time of slack water may differ by several hours from the time of high or low water stand. The relation of the times of high and low water to the turning of the current depends upon a number of factors, hence no simple rule can be given. (See the Tidal Current Tables for predicted times of slack water or strength of current.)

Currents

(46) The nontidal current that sets N and W along the coasts of British Columbia and Alaska is greatly affected by strong winds and may reach velocities of 1.5 knots; the offshore extent of this current is not known but it is believed to be strongest between the 100-fathom curve and the coast. (See the Tidal Current Tables for more detailed information on currents.)

(47) **Tide rips** and **Swirls** in regions of strong currents usually are encountered in the vicinities of shoals, islands, or points and are, therefore, generally positive indications of danger. The backwash from seas striking steep cliffs often is felt at a considerable distance. In thick weather, any change in the feel of a moving vessel should be considered a warning of possible danger.

Earthquakes

(48) The March 27, 1964, earthquake had wide effect on Prince William Sound, Cook Inlet, and Kodiak Island. Post-earthquake tidal observations indicate bottom changes ranging from a sinkage of 6 feet to a rise of 32 feet. Caution is advised in the affected areas because many of the depths and rocks yet to be resurveyed may be considerably different than represented on the nautical charts or in this Coast Pilot.

Tsunamis (seismic sea waves)

(49) There is no record of any destructive seismic sea wave along the Bering Sea coast of the Alaska mainland. The rest of Alaska, especially the area from Attu Island to Cape Spencer, occasionally is subject to severe waves which cause widespread damage to waterfront areas and shipping. Loss of life and property can be reduced by correct response to warning that such waves are imminent. (See chapter 1 for details about these waves.)

(50) One of the world's most active seismic belts parallels the S sides of the Aleutian Islands and the Alaska Peninsula. Another active belt parallels southeast Alaska and Canada. Earthquakes are frequent in both these areas but only a very few generate seismic waves. The National Oceanic and Atmospheric Administration has the Alaska Tsunami Warning Center at Palmer, Alaska, which will issue warnings of tsunamis generated in the Gulf of Alaska and the Aleutian Islands. Because of extensive telemetry nets, it is anticipated that this center will be able to issue tsunami warnings, based on seismic evidence, within 15 minutes of the occurrence of the generating earthquake. Warnings will be disseminated by the National Weather Service on NOAA Weather Radio and through Civil Defense and military authorities.

(51) Because of the long length of Alaskan coastline and the vulnerability of communication facilities to major earthquakes, any unexplained withdrawal or advance of the sea within an hour or so after an earthquake is felt should be considered nature's warning of an approaching wave.

(52) When a warning is received, persons should vacate waterfront areas and seek high ground. The safest procedure for ships will depend on the amount of time available, and this may not always be known. A ship well out at sea would ride such waves safely, and hence if time is available to put to sea, that would be the safest action. On the other hand, the crew of a ship in harbor may have a difficult time averting serious damage. The ship may be washed ashore by incoming waves or grounded because of excessive withdrawal of water between crests. Much of the damage in the Los Angeles area during the 1960 Chilean tsunami was caused by rapid currents and the swift rise and fall of the water level that parted mooring lines and set floating docks and ships adrift.

Weather, Cape Spencer to Beaufort Sea

(53) This section presents an overall, seasonal picture of the weather that can be expected in the offshore waters along the entire coast of Alaska as well as coastal and near-coastal sites. Detailed information, particularly concerning navigational weather hazards, can be found in the weather articles in the following chapters.

(54) All weather articles in this volume are the product of the National Oceanographic Data Center (NODC) and the National Climatic Data Center (NCDC). The meteorological and climatological tables are the product of the NCDC. Both centers are entities of the National Environmental Satellite, Data, and Information Service (NESDIS) of the National Oceanic and

Atmospheric Administration (NOAA). If further information is needed in relation to the content of the weather articles, meteorological tables or climatological tables, please contact the National Climatic Data Center, Attn: Customer Service Division, Federal Building, 151 Patton Avenue, Room 120, Asheville, NC 28801-5001. You may also contact the CSD at 704-271-4994, or fax your request to 704-271-4876.

(55) Climatological tables for coastal locations, meteorological tables for the coastal ocean areas, a table of dates for ice breakup and freeze up, and a table of mean surface water temperatures and densities relevant to locations discussed within this volume, follow the appendix. The climatological tables are a special extraction from the International Station Meteorological Climate Summary. The ISMCS is a CD-ROM jointly produced by the National Climatic Data Center, Fleet Numerical Meteorology and Oceanography Detachment-Asheville, and the U.S. Air Force Environmental Technical Applications Center, Operating Location - A. The meteorological tables for the ocean areas are compiled from observations made by ships in passage and extracted from the National Climatic Data Center's Tape Deck-1129, Surface Marine Observations. Listed in the appendix are National Weather Service offices and radio stations which transmit weather information.

(56) Marine Weather Services Charts published by the National Weather Service show radio stations that transmit marine weather broadcasts and additional information of interest to mariners. These charts are for sale by the National Ocean Service Distribution Division (N/ACC3). (See appendix for address.)

Winter (October–March)

(57) The Aleutian Low looms over the North Pacific as a climatic warning to mariners navigating the Alaskan waters. This semipermanent feature is made up of the day-to-day storms that traverse these seas in a seemingly endless procession. With these storms come the rain, sleet, snow, the howling winds, and the mountainous seas that make the northern Gulf of Alaska and the southern Bering Sea among the most treacherous winter waters in the Northern Hemisphere.

(58) The broad expanse of the Aleutian Low covers the Pacific Basin from the Arctic Ocean to 30 °N, and from the North American coast to Japan. From one center located in the northern Gulf of Alaska in October, two centers form by December; one remaining in the northern Gulf while the other is located in the western Bering Sea. By January, the Bering Sea center has totally replaced the Gulf of Alaska center and remains until March when the gradient weakens and once again the Gulf of Alaska cell reappears. While this migration indicates a shift in storm activity, particularly intensity, on average three or four storms per month still move through the area. Winter or extra tropical storms from the Asian mainland and the waters around Japan generally move Northeast toward the Aleutians and then into either the Bering Sea or the Gulf of Alaska. Once they reach the Alaskan coast, they have a tendency to stall and dissipate, particularly in the Gulf, where there are mountain barriers to the North and East. Early winter storms are often intense and are more likely to make it into the Bering Sea than mid-and late-season storms. This makes the early part of the winter the roughest part of a rough season in the Gulf and the southern Bering Sea. As winter progresses, more storms remain south of the Aleutians which results in a noticeable difference in wind, wave, and weather conditions in the navigable Alaskan waters.

(59) Winter winds are variable and no one direction prevails. In the northern Gulf, easterlies, southeasterlies, and westerlies are common. In the southern Bering Sea, including the Aleutian waters, Southwest through Northwest winds, common early in the season, give way to North through East winds by January. This is a reflection of the more southerly route of the storms. Gales, which blow 10 to 20 percent of the time, are most likely in November and December. Windspeeds average 16 to 20 knots; peak values occur in October, November, and December. Wave heights climb to 10 feet (3 m) or more throughout the winter. In situations that occur on the average of once every five years, severe wind and wave conditions may be encountered. Along the Aleutians, sustained winds may reach 65 to 70 knots; significant wave heights can climb to 40 to 50 feet (12.2 to 15.2 m), with an extreme wave height reaching 80 to 90 feet (24.4 to 27.4 m). In the northern and western Gulf of Alaska and in Bristol Bay, sustained winds may reach 60 to 70 knots; significant wave heights can climb to 30 to 40 feet (9.1 to 12.2 m), with an extreme wave height of 60 to 75 feet (18.3 to 22.9 m). These extremes are most likely to occur during the winter season.

(60) In winter, precipitation occurs 20 to 35 percent of the time. It is most likely along the Aleutians, where it falls as snow more than one-half of the time in midwinter. In the Gulf, it snows about 5 to 10 percent of the time. Since snow is the primary restriction to visibility in the winter, restrictions are most likely to occur along the Aleutians. Visibilities less than two miles occur 5 to 15 percent of the time. Cold winter temperatures are a result of winds blowing off land or off the ice sheet. Temperatures drop to freezing or below about 20 to 30 percent of the time in January. Rare polar outbreaks from the Arctic can drop temperatures into the teens F ° (-7° to -11°C).

(61) Heavy swells out of the South through Southwest in Aleutian waters are often forerunners of intense storms from the waters around Japan. They can climb to 20 to 30 feet (6.1 to 9.1 m). As storms from the South or West approach the Aleutians, they bring clouds and either rain or snow. Winds blow out of the Northeast through Southeast. They can reach gale force and whip up 30-foot (9.1 m) seas. Gales and high seas can occur before and after the storm passes.

(62) Lows running East with their centers South of the Aleutians, as is common in midwinter, usually bring East winds backing through North to West over the southern Bering Sea. These winds can reach 60 knots, with seas to 30 feet (9.1 m). As these storms and storms from the mid-Pacific approach the Gulf of Alaska, they are sometimes preceded by heavy swells from the Southeast through the Southwest. Then winds strengthen out of the Northeast through South as clouds and rain begin to move in. Gales and 30-foot (9.1 m) seas are not unusual with intense storms. Sometimes they will stall in the Gulf and prolong these rough conditions for several days. When a low is centered in the eastern Gulf, winds are generally out of the East off Sitka, out of the North off Seward, and out of the Northwest off Kodiak.

(63) Storms that move East or Northeast, remaining North of the Aleutians, as is common early and late in the season, are followed by a Southwest through North flow that can reach gale force, raise high seas, and bring snow. If these storms move into Bristol Bay, they can create a strong Southeast to Southwest flow in the northern Gulf of Alaska which can raise 20-foot (6 m) seas.

(64) In the Gulf of Alaska, conditions are often roughest in the waters south of Seward and east of Kodiak Island. The long fetch to the east and southeast allows a buildup of sea and swell from that quarter. Wave heights reach 20 feet (6.1 m) or more up to eight percent of the time in November, the roughest month. This is as rough as it gets in the Aleutians. Gales are most frequent here, blowing 15 to 17 percent of the time early in the season. While they blow most often out of the east, they are also common from the west and northwest.

Summer (April–September)

(65) The changeover from winter to summer is subtle. The Aleutian Low slowly weakens and retreats, and by July has been totally replaced by the North Pacific High. The storms still come, but they are less intense. Winds get strong, but become gales less often. Rough seas are encountered, but less frequently. Clouds and rain remain a persistent weather feature, but snow and cold retreat northward. Winds blow more often from a southerly quadrant, bringing warmth and the most dangerous and frequent summer-weather navigational hazard, fog.

(66) Fog hampers navigation most often during June, July, and August. It is an advection or sea fog that forms when warm moist air blows across cooler water. The south westerlies and westerlies that blow across the cold Oyashio Current, which runs south along Kamchatka and the Kurils, often bring a dense, widespread fog to the Aleutians and the southern Bering Sea. This fog can engulf a ship traversing these waters for several days. Sea fog is also common, but a little less frequent, in the northern Gulf of Alaska and along the northwest and north coasts of Alaska. Off the west coast of Alaska and along the Aleutians, visibilities drop below two miles about 20 to 40 percent of the time, and one-half mile or below up to 20 percent of the time. Elsewhere, fog is about one-half as frequent.

(67) During May and June, summer weather features become more apparent. While the low pressure systems that move through the area cause variable winds, south through west winds are the most common. Gales occur less than ten percent of the time everywhere; they are least likely in June, July, and August. Seas of 20 feet (6.1 m) or more are unlikely from May through August, when seas of 10 to 20 feet (3 to 6.1 m) occur 5 to 15 percent of the time; they are most likely in the northwestern Gulf and the Aleutians. Off the north coast, they have been observed less than five percent of the time. Freezing temperatures are rare from June through September except off the north coast.

(68) The weather-producing storm systems are gradually forced northward by the North Pacific High. Some still move over the old winter routes, but they are usually weak. By midsummer, numerous weak lows find their way through the Bering Sea and Strait. This results in a maximum of cloudiness and precipitation off the northwest and north coasts of Alaska, and a minimum in the Gulf of Alaska and along the Aleutians. The more restricted movements of these storms and the clockwise flow around the North Pacific High to the south, help make south through west winds the most common in the Alaskan coastal waters, except off the north coast where northeasterlies and easterlies prevail.

(69) September weather is often a harbinger of winter. This transition is usually more abrupt than the change from winter to summer. More storms begin moving into Bristol Bay and the Gulf of Alaska; some are intense. Gales blow up to five percent of the time, and 20- to 30-foot (6 to 9 m) seas are occasionally encountered in the northwestern Gulf and southern Bering Sea. Waves of ten feet (3 m) or more occur up to 20 percent

of the time. Breezy, warm days alternate with cool, stormy ones. Winter is approaching.

Waves

(70) The table below (extracted from Marine Weather of Western Washington. Kenneth E. Lilly, Jr., Commander, NCAA, Starpath School of Navigation, 1983) shows the relationship between significant and other wave heights.

Wave Heights from Significant Wave Heights (SWH)

Most frequent wave heights:	0.5 x SWH
Average wave heights:	0.6 x SWH
Significant wave height (average height of highest 33%)	1.0 x SWH
Height of highest 10% of the waves:	1.3 x SWH
One wave in 1,175 waves:	1.9 x SWH
One Wave in 300,000 waves:	2.5 x SWH

(71) This table can be used to project a range of wave heights that might be expected in deep water. If significant wave heights of 10 feet (3 m) are forecast then the most frequently observed waves should be 5- to 6-foot (1.5 to 1.8 m) range while one wave in 100 should reach 17 feet (5.2 m).

(72) A giant or rogue wave might reach 25 feet (7.6 m) in these circumstances. These rogue or "killer" waves occur when the large number of different waves that make up a sea occasionally reinforce each other. This action creates a wave that is much steeper and higher than the surrounding waves. These rogue waves often occur in a stormy sea and are described by mariners who have experienced them, as coming out of nowhere and disappearing just as quickly. If significant wave heights are observed at 20 feet (6.1 m) then a rogue wave could reach 50 feet (15.3 m) if the water depth could support it.

(73) Steep waves are often more dangerous than high waves with a gentle slope. Waves appear menacing when the ratio of wave height to length reach about 1/18 . They begin to break when this ratio is about 1/10 . Steepest waves develop when strong winds first begin to blow or early in a storm's life. The ship no longer rides easily but is slammed. Steep waves are particularly dangerous to small craft. When wave heights are greater than 5 feet (1.5 m), periods of less than 6 seconds can create problems for boats under 100 feet (31 m) in length. Waves of 10 feet (3 m) or more with periods of 6 to 10 seconds can affect comfort in 100- to 200-foot vessels (31 to 61 m). When wind waves reach 20 feet (6.1 m) they become hazardous to vessels under 200 feet (61 m) in length and provide a rough ride for larger ships. Waves moving into shallow water become steeper and break when the depth is about 1.3 times the wave height. Wave steepness is also increased by tidal currents, particularly when they oppose the wind.

(74) Swells can create problems for larger vessels. About one-half of the waves of 10 feet (3 m) or more, in these waters, are swells from distant storms. They are uncomfortable to ships that roll or pitch in sympathy. Swells with 500- to 1000-foot (153 to 305 m) wave lengths affect ships of these lengths. When steaming into such swells a resonance is set up until the bow digs into the waves. The resulting pitch will cause more of a power loss than a roll caused by a sea. Swells with wave lengths that range from about three-fourths to twice the ships length can have this effect. Pitching is heaviest when the ship's speed produces synchronism between the period of encounter and the ships natural pitching period—this often occurs at or near normal ship speeds.

(75) When in running before a following sea, the greatest danger arises when speed is equal to that of the waves or when the waves overtake the ship so slowly that an almost static situation is created with the vessel lying on the wave crest. In this latter case stability is so reduced that a small vessel could capsize. Waves on the quarter or astern can also result in very poor steering quality. As seas move along the vessel from aft to forward the rudder is less effective and the boat may be slewed across the face of a sea filling the decks with water as she broaches. She could lose her stability and capsize, particularly if the boat is trimmed by the head.

Superstructure icing

(76) Ice accretion on ships can occur in Cold water seas. It is caused by freezing spray, freezing rain, or steam fog. On large merchant ships, it often results in only slippery decks, since they have a high freeboard and often pass quickly through icing conditions. Fishing trawlers, small merchant ships, and Coast Guard cutters have other problems. Their freeboard are relatively low. A trawler often has a large top hamper and is usually confined to one area for long periods. On a small ship, icing can greatly increase the weight. It elevates the center of gravity, which decreases the metacentric height. It increases the sail area and heeling moment due to wind action. The trim is altered because of the non-uniform distribution of ice. Icing hampers steerability and lowers ship speed. Icing may also affect communications, especially by icing of antennas.

(77) Freezing sea spray is by far the most common and dangerous form of icing and accounts for about 86% of the reported cases. It can occur when the air temperature falls below the freezing temperature of seawater

(usually about 28 ° F, -2.2°C) and sea-surface temperatures are below about 41° F (5°C). If air temperature falls below about 0 ° F, (-17.8°C), wind-induced spray may freeze before striking the ship and not adhere. In general, however, the lower the temperature and the stronger the wind, the more rapid the accumulation of ice.

(78) Tests by the Russians, Japanese, and British have shown that when air temperatures are just below the freezing point of the seawater, ice buildup is slow, and will not accumulate at more than one ton (1.1 t) per hour on a 300- to 500-ton vessel, in any wind. On a vessel of this size, a moderate buildup of less than four tons (4.4 t) per hour will generally occur with air temperatures between 27 °F and 18°F (-2.8°C and -7.8°C), in winds of 16 to 30 knots. When winds exceed 30 knots and temperatures drop below 18 °F (-7.8°C), conditions are right for an accumulation rate of more than four tons (4.4 t) per hour on a 300- to 500-ton vessel. These figures are somewhat subjective, and represent a compromise of opinions of the major maritime nations.

(79) Freezing rain can coat a ship with a freshwater glaze of ice the same way it covers trees and roads on land. The weight picked up is usually not enough to endanger a ship, but this ice can make topside conditions dangerous. Steam fog can occur when the air temperature is considerably colder than the sea surface temperature. It is usually confined to a layer a few feet thick. Trawler men call it “white frost” when the top of the layer is below the observer’s eye level, and “black frost” when it extends above the observer. If the air temperature is considerably below freezing, the small water droplets in this fog are supercooled (exist as water even though the temperature is below freezing) and freeze on contact with the cold ship. Usually, ice accretion by this method is small. However, there are exceptions. The ERNEST HOLT, about 100 miles (185 km) east of Bjornoya Island (an island north of Norway) and 20 miles (37 km) from the ice edge, ran into a dense steam fog. She took four inches (102 mm) of rime ice on the deck, with up to 12 inches (305 mm) on the ship’s side at the level of the rail, within a 12-hour period.

(80) The two categories of potential icing are somewhat subjective, but give a relative idea of which areas are dangerous. Moderate icing potential exists when temperatures fall to 28 °F (-2.2°C) or below, and winds blow at 13 knots or more. This means a probable accumulation of up to about two inches (51 mm) per hour. The potential for severe icing (greater than two inches (51 mm) per hour) exists when temperatures are 16 °F (-8.9°C) or lower, and winds are 30 knots or more.

(81) Superstructure icing is a threat in the northern Gulf of Alaska and along the Aleutians, from about November through April. In the Gulf, the waters around Kodiak Island are the worst. Here the potential for moderate icing exists 10 to 20 percent of the time from December through March, compared to a 3- to 10-percent potential in the other Gulf coastal waters. There is also a slight chance of severe icing in Kodiak waters during this period. The December-through-March period is also the roughest along the Aleutians, where the potential for moderate superstructure icing exists 10 to 25 percent of the time; severe icing is unlikely since temperatures rarely get down into the teens. In the ice-free waters of the southern Bering Sea and Bristol Bay, the potential for moderate superstructure icing exists 20 percent or more of the time from December through March, and up to 50 percent of the time in February. Severe icing is also a threat in February, when the conditions for it occur 5 to 10 percent of the time. Icing in the navigable northern Bering Sea waters can be a threat as early as September and as late as May.

(82) Icing rates can be cut by slowing down to reduce ship-generated spray. A course change to reduce spray, however, should be secondary to getting away from the icing, except in critical conditions. Another precaution is to remove the ice, if possible. When icing becomes a problem, it is important first to free the aerials, freeing ports, stays, shrouds, masts, rigging davits, running and navigational lights, windlass, and hawsepipes. If the ice is unevenly distributed, it should be removed from the listing side first.

(83) The Russians are well experienced with superstructure icing, as they do a lot of coldwater fishing. From a proposal they made to the International Maritime Organization (IMO), here are some excellent suggestions of what to do in an icing situation.

(84) **Tips to keep icing hazards to a minimum aboard fishing vessels:**

(85) 1. Head for warm water or protected coastal areas.

(86) 2. All fishing gear, barrels, and deck gear should be placed below deck or fastened to the deck as low as possible.

(87) 3. Cargo booms should be lowered and fastened.

(88) 4. Deck machinery and boats should be covered.

(89) 5. Storm rails should be fastened.

(90) 6. Gratings should be removed from scuppers, and all objects that might prevent water drainage from the deck should be moved.

(91) 7. Ship should be as watertight as possible.

(92) 8. If freeboard is high enough, all empty bottom tanks containing ballast piping can be filled with seawater.

(93) 9. Reliable two-way radio communication should be established either with a shore station or another ship.

Williwaws

(94) These dangerous winds occur mainly along the Aleutian chain and Gulf of Alaska shores, and are influenced by local topography. They are most frequent in winter and are usually the result of air damming up on the windward slopes of mountains. This air spills over in strong gusts on the lee side; that lasts as long as the dammed-up cold air lasts, which frequently is only a matter of minutes. However, such winds are violent, often reaching hurricane force, and their onset is sudden, often interrupting periods of near-calm conditions. Some locations sheltered from the normal winds of the area may be extremely vulnerable to williwaws.

Ice

(95) Ports in the Aleutian Islands and in the Gulf of Alaska, except at the upper end of Cook Inlet, are ice free and open to navigation the year around. Ports N of Unimak Pass are icebound in varying degrees. (See page T–21 for dates of ice breakup and freezeup. See the Cook Inlet introductory section and specific port description for more information.) Ice can be a problem in the Cook Inlet from Ninichik to Anchorage, from the combination of temperature, currents, and ice floe encounters. Propulsion and machinery have special equipment and operating requirements, as do cargo operations, moorage, and vessel draft. See Winter Operating Guidelines (indexed as such), chapter 4 and contact the USCG Captain of the Port, Western Alaska, for more information.

Routes

(96) These are the usually traveled routes in W Alaska. In laying out courses to pass through the geographic positions of the turning points listed, allowance must be made for wind and current. Departure from these routes may become necessary because of weather conditions and ice in the more N latitudes. Special attention should be given to the continual current setting N and W along the coast of Alaska. Where necessary, directions for entering a port are given in the text for the place concerned, including information about dangers, prominent features, and other pertinent information.

Strait of Juan de Fuca to Prince William Sound ports (Cordova, Valdez, Whittier)

(97) Rhumb lines through:
(98) 48°31'N., 125°00'W.; Swiftsure Bank, Washington.
(99) 48°50'N., 125°39'W.; of Amphitrite Point, Canada.
(100) 50°01'N., 128°03'W.; off Solander Island, Canada.
(101) 51°49'N., 131°12'W.; off Cape St. James, Canada.
(102) 60°13'N., 146°41'W.; off Cape Hinchinbrook, Alaska.

Strait of Juan de Fuca to Seward

(103) Same as to Prince William Sound ports to
(104) 51°49'N., 131°12'W., thence great circle to
(105) 59°51'N., 149°17'W., S of Barwell Island off Cape Resurrection.

Strait of Juan de Fuca to Cook Inlet ports (Seldovia, Homer, Nikishka, Drift River, Anchorage)

(106) Same as to Prince William Sound ports to
(107) 50°01'N., 128°03'W., thence great circle to
(108) 59°03'N., 151°26'W., off East Chugach Island.

Strait of Juan de Fuca to Kodiak

(109) Same as to Prince William Sound ports to
(110) 50°01'N., 128°03'W., thence great circle to
(111) 57°42'N., 152°09'W., N of Cape Chiniak.

Strait of Juan de Fuca to Unimak Pass

(112) Great circle from
(113) 48°31'N., 125°00'W., to
(114) 54°00'N., 163°00'W., thence rhumb line to
(115) 54°20'N., 164°45'W., off Scotch Cap.

Cape Spencer to Prince William Sound ports

(116) Rhumb lines through:
(117) 58°10'N., 136°38'W.; off Cape Spencer.
(118) 59°43'N., 144°38'W.; S of buoy off Cape St. Elias.
(119) 60°13'N., 146°41'W.; off Cape Hinchinbrook.

Cape Spencer to Seward

(120) Rhumb lines through:
(121) 58°10'N., 136°38'W.; off Cape Spencer.
(122) 59°21'N., 146°19'W.; S of Middleton Island.
(123) 59°51'N., 149°17'W.; S of Barwell Island off Cape Resurrection.

Cape Spencer to Cook Inlet ports

(124) Rhumb line from
(125) 58°10'N., 136°38'W. to
(126) 59°03'N., 151°26'W.

Cape Spencer to Kodiak

(127) Rhumb line from
(128) 58°10'N., 136°38'W. to
(129) 57°42'N., 152°09'W.

Prince William Sound ports to Seward

(130) From Elrington Passage clear Cape Puget and Cape Junken by 1 mile, thence to 59°51'N., 149°17'W., S of Barwell Island off Cape Resurrection.

Prince William Sound ports to Cook Inlet

(131) From Elrington Passage, rhumb lines through:
(132) 59°33'N., 149°38'W.; N of Seal Rocks.

(133) 59°21'N., 150°14'W.; off Outer Island.
(134) 59°09'N., 150°57'W.; off Gore Point.
(135) 59°03'N., 151°26'W.; off East Chugach Island.

Prince William Sound ports to Kodiak

(136) From Elrington Passage, rhumb line to 57°50'N., 152°17'W.; off Spruce Cape.

Prince William Sound ports to Unimak Pass

(137) Same as to Cook Inlet, thence Shelikof Strait route.

Seward to Cook Inlet

(138) Rhumb lines through:
(139) 59°45'N., 149°26'W.; off Pilot Rock.
(140) 59°36'N., 149°32'W.; off Chiswell Island.
(141) 59°31'N., 149°40'W.; off Seal Rocks.
(142) 59°21'N., 150°14'W.; off Outer Island.
(143) 59°09'N., 150°57'W.; off Gore Point.
(144) 59°03'N., 151°26'W.; off East Chugach Island.

Seward to Kodiak

(145) Same as to Cook Inlet to 59°31'N., 149°40'W., thence rhumb lines through:
(146) 58°21'N., 151°54'W.; off Tonki Cape.
(147) 58°13'N., 151°56'W.; Marmot Strait.
(148) 57°50'N., 152°17'W.; off Spruce Cape.

Seward to Unimak Pass

(149) Same as to Cook Inlet, thence Shelikof Strait route.

Cook Inlet to Kodiak

(150) Rhumb lines through:
(151) 59°03'N., 151°53'W.; S of Cape Elizabeth Island.
(152) 58°21'N., 151°54'W.; off Tonki Cape.
(153) 58°13'N., 151°56'W.; Marmot Strait.
(154) 57°50'N., 152°17'W.; off Spruce Cape.

Cook Inlet to Unimak Pass

(155) Shelikof Strait route.

Shelikof Strait route–Cook Inlet to Unimak Pass

(156) Rhumb lines through:
(157) 59°03'N., 151°26'W.; off East Chugach Island.
(158) 59°01.6'N., 152°19.0'W.; N of Ushagat Island.
(159) 57°38.5'N., 154°33.8'W.; off Cape Uyak.
(160) 56°27.0'N., 156°48.0'W.; off Foggy Cape.
(161) 55°46.0'N., 158°37.8'W.; SE of Mitrofania Island.
(162) 55°21.6'N., 160°03.6'W.; N of Andronica Island.
(163) 55°22.8'N., 160°21.7'W.; N of Popof Island.
(164) 55°26.0'N., 160°43.5'W.; off Unga Spit.
(165) 55°17.5'N., 161°15.2'W.; off Seal Cape Light.
(166) 55°17.2'N., 161°39.5'W.; N of Ukolnoi Island.
(167) 55°10.9'N., 161°54.2'W.; off Arch Point.
(168) 55°07.5'N., 161°55.6'W.; off Moss Cape.
(169) 55°06.7'N., 161°56.2'W.; NW of Goloi Island.
(170) 55°02.6'N., 161°54.5'W.; E of Iliasik Islands Light.
(171) 55°02.0'N., 161°55.5'W.; SE of Iliasik Islands Light.
(172) 55°00.5'N., 162°20.1'W.; N of Deer Island.
(173) 54°57.4'N., 162°27.6'W.; W of Fox Island.
(174) 54°48.1'N., 162°44.6'W.; W of Umga Island.
(175) 54°37.8'N., 163°03.6'W.; off Cape Pankof.
(176) 54°20'N., 164°45'W.; off Scotch Cap.

Kodiak to Unimak Pass

(177) Proceed via Narrow Strait, Whale Passage, Kupreanof Strait, and Shelikof Strait route.

Unimak Pass to Aleutian Islands ports

(178) Rhumb lines along the N coast of the Aleutian chain through:

To Dutch Harbor and Unalaska

(179) 54°20'N., 164°45'W.; off Scotch Cap.
(180) 54°20'N., 165°38'W.; off Akun Head.
(181) 54°16'N., 166°00'W.; off North Head.
(182) 54°02'N., 166°24'W.; off Priest Rock Light.
(183) 53°55'N., 166°29'W.; off Ulakta Head.

To Kuluk Bay

(184) 54°20'N., 164°45'W.; off Scotch Cap.
(185) 54°20'N., 165°38'W.; off Akun Head.
(186) 54°08'N., 166°40'W.; off Cape Cheerful.
(187) 53°36'N., 168°14'W.; N of Umnak Island.
(188) 52°28'N., 172°26'W.; N of Seguam Island.
(189) 52°28'N., 174°09'W.; off North Cape Light (Atka Island).
(190) 52°10'N., 176°09'W.; off Swallow Head Light (Great Sitkin Island).
(191) 51°54'N., 176°30'W.; E of Kuluk Shoal.

To Kiska

(192) Same as to Kuluk Bay to 52°10'N., 176°09'W., thence rhumb lines through:
(193) 52°07'N., 179°46'E.; N of Semisopochnoi Island.
(194) 52°08'N., 178°05'E.; N of Segula Island.
(195) 52°05'N., 177°46'E.; E of Haycock Rock.
(196) 51°58'N., 177°35'E.; off North Head.

To Alcan Harbor

(197) Same as to Kiska to 52°08'N., 178°05'E., thence rhumb lines through:
(198) 52°13'N., 177°38'E.; off Sirius Point (Kiska Island).
(199) 52°47'N., 174°05'E.; N of Shemya Island.

To Massacre Bay

(200) Same as to Alcan Harbor, thence rhumb lines through:
(201) 52°49'N., 173°53'E.; N of Alaid Island.

(202) 52°47'N., 173°19'E.; off Alexai Point.

(203) Vessels may also proceed from Unimak Pass to Massacre Bay by great circle.

Unimak Pass to Bering Sea ports

(204) Rhumb lines through:

(205) **To Port Moller**

(206) 54°20'N., 164°45'W.; S of Scotch Cap Light.

(207) 54°24'N., 164°59'W.; W of Scotch Cap Light.

(208) 54°36'N., 165°04'W.; off Cape Sarichef Light.

(209) 55°00'N., 164°36'W.; off Cape Mordvinof.

(210) 55°31'N., 163°18'W.; off Sea Lion Rock.

(211) 55°53'N., 162°15'W.; off Black Hill.

(212) 56°06'N., 160°50'W.; thence to entrance buoy.

(213) **To Kvichak Bay**

(214) Same as to Port Moller to 55°00'N., 164°36'W.; thence rhumb lines through:

(215) 57°44'N., 157°53'W.; off Cape Greig Light.

(216) 58°14'N., 157°53'W.; off Red Bluff Light.

(217) 58°27'N., 157°41'W.; off Middle Bluff Light; thence to the anchorage off the entrance to Naknek River.

(218) **To Nushagak Bay**

(219) Same as to Port Moller to

(220) 55°00'N., 164°36'W.; thence rhumb line to

(221) 57°44'N., 157°53'W. (off Cape Greig Light); thence to entrance buoy.

(222) **To St. Michael**

(223) 54°20'N., 164°45'W.; S of Scotch Cap Light.

(224) 54°24'N., 164°59'W.; W of Scotch Cap Light.

(225) 54°36'N., 165°04'W.; off Cape Sarichef Light.

(226) 60°14'N., 168°04'W.; off Cape Mohican Light (Nunivak Island).

(227) 63°00'N., 167°40'W.; 32 miles E of St. Lawrence Island.

(228) 63°41'N., 165°18'W.; Norton Sound.

(229) 63°41'N., 162°21'W.; N of Stuart Island.

(230) 63°32'N., 161°55'W.; off St. Michael.

(231) **To Golovnin Bay**

(232) Same as to St. Michael to

(233) 63°00'N., 167°40'W. thence rhumb line to

(234) 64°20'N., 163°00'W.

(235) **To Nome**

(236) Same as to St. Michael to

(237) 63°00'N., 167°40'W., thence rhumb line to

(238) 64°29'N., 165°26'W.

(239) **To Port Clarence**

(240) Same as to St. Michael to 63°00'N., 167°40'W., thence rhumb lines through:

(241) 64°58'N., 167°40'W.; E of King Island.

(242) 65°19'N., 167°40'W.; off Cape York.

(243) 65°19'N., 166°51'W.; off Point Spencer.

(244) 65°17'N., 166°25'W.

Unimak Pass to Arctic Ocean ports:

(245) **To Point Hope**

(246) Same as to St. Michael to 63°00'N., 167°40'W., thence rhumb lines through:

(247) 64°58'N., 167°40'W.; E of King Island.

(248) 65°38'N., 168°31'W.; E of Fairway Rock.

(249) 68°21'N., 167°18'W.

(250) **To Point Barrow**

(251) Same as to Point Hope to 68°21'N., 167°18'W., thence rhumb lines through:

(252) 68°58'N., 166°40'W.; off Cape Lisburne.

(253) 70°34'N., 162°25'W.; off Icy Cape.

(254) 71°20'N., 156°55'W.

Offshore Vessel Traffic Management Recommendations

(255) The **United States Coast Guard Pacific Area** recommends that, where no other traffic management areas exist such as **Traffic Separation Schemes**, **Vessel Traffic Services**, or **recommended routes**, vessels 300 gross tons or larger transiting along the coast anywhere between Cook Inlet and San Diego should voluntarily stay a minimum distance of 25 nautical miles offshore. The USCG Pacific Area further recommends that tank ships laden with persistent petroleum products and transiting along the coast between Cook Inlet and San Diego should voluntarily stay a minimum distance of 50 nautical miles offshore. Vessels transiting short distances between adjacent ports should seek routing guidance as needed from the local Captain of the Port or VTS authority for that area.

Principal ports

(256) The principal deep-draft commercial ports within the area of this Coast Pilot are: Cordova, Valdez, Whitter, Seward, Homer, Kenai, Nikiski, Drift River, Anchorage, Kodiak, Sand Point, Unalaska, and Adak.

Pilotage, General

(257) State requirements for pilotage, except for certain exempted vessels, are compulsory for all vessels navigating the inside waters of the State of Alaska. Federal requirements are specified in 46 U.S.C. 8502. Exempted from state requirements are

(258) (1) vessels subject to federal pilot requirements under 46 U.S.C. 8502;

(259) (2) fishing vessels, including fish processing and fish tender vessels, registered in the United States or in British Columbia, Canada;

(260) (3) vessels propelled by machinery and not more than 65 feet in length over dock, except tugboats and towboats propelled by steam;

(261) (4) vessels of United States registry of less than 300 gross tons and towboats of United States registry and

vessels owned by the State of Alaska, engaged exclusively

(262) (A) on the rivers of Alaska, or

(263) (B) in the coastwise trade on the W or N coasts of the United States including Alaska and Hawaii, and including British Columbia, Yukon Territory, and Northwest Territories, Canada;

(264) (5) vessels of Canada, built in Canada and manned by Canadian citizens, engaged in frequent trade between

(265) (A) British Columbia and Southeastern Alaska S of 58°10'N., if reciprocal exemptions are granted by Canada to vessels owned by the State of Alaska and those of Alaska and those of United States registry, or

(266) (B) northern Alaska N of 68°07'N. and Yukon Territory or Northwest Territories;

(267) (6) pleasure craft of United Sates registry; and

(268) (7) pleasure craft of foreign registry of less than 300 gross tons as measured under **46 CFR 69.51 through 69.75**.

(269) The State of Alaska has established the following boundaries for the inside waters of South Central and Western Alaska:

(270) (1) All waters of Prince William Sound inside a line drawn from Cape Puget to Point Elrington, thence to Cape Cleare, thence Zaikof Point to Cape Hinchinbrook Light, thence Point Bentinck to Okalee Spit;

(271) (2) all waters of Resurrection Bay inside a line extending from the S tip of Aialik Cape to the S tip of Cape Resurrection;

(272) (3) all waters of Cook Inlet inside a line drawn from Cape Douglas (58°51.2 'N., 153°14.9'W.) to the W tip of Perl Island (59°07.0'N., 151° 43.6'W.) thence N to the Kenai Peninsula shoreline;

(273) (4) all waters of Chiniak Bay inside a line extending from Cape Chiniak to the E tip of Long Island then to Spruce Cape;

(274) (5) all waters of Marmot Bay and environs including eastern approaches, inside a line extending from Spruce Cape to the S tip of Pillar Cape and western approaches, inside a line extending from Cape Nuniliak to the N tip of Raspberry Island and also inside a line extending from Raspberry Cape to Miners Point;

(275) (6) all waters of Chignik Bay inside a line extending from the E tip of Castle Cape to the W tip of Nakchamik Island then to the E tip of Cape Kumhun;

(276) (7) all waters of Unalaska Bay inside a line extending from the tip of the W headland of Constantine Bay to Eider Point;

(277) (8) all waters of Port Moller and Herendeen Bay inside a line extending from Lagoon Point to Cape Kutuzof;

(278) (9) all waters of Bristol Bay inside a line extending from Cape Newenham to Cape Pierce, then to Cape Constantine, then to the S extremity of Egegik Bay;

(279) (10) all waters of Kuskokwin Bay inside a line extending from Cape Newenham to Cape Avinof;

(280) (11) all waters of Norton Sound inside a line extending from the W tip of Stuart Island to Cape Darby, then to Cape Nome;

(281) (12) all waters of Port Clarence inside a line extending from Point Spencer Light N to the Seward Peninsula shore;

(282) (13) all waters of the Chukchi Sea and Kotzebue Sound inside a line extending from Cape Prince of Wales 3 miles due W to approximately 65 °38'N, 168°15'W. then due N to about 66°27'N, 168°15'W, then 059 ° true to about 66°45'N, 167°02'W, then due E to a point about 12 miles off the coast of Cape Espenberg at the intersection with a line drawn from Cape Espenberg to Cape Krusenstern (about 66 °45'N., 163°40'W) then to Cape Krusenstern, then to Point Hope;

(283) (14) all waters surrounding the Pribilof Islands of St. Paul and St. George from the shorelines seaward to the outer limit of the 3-mile territorial seas.

(284) At all buoyed entrances from seaward to bays, sounds, rivers, or other estuaries for which specified boundary lines are not described, the waters inshore of a line drawn approximately parallel with the general trend of the shore, drawn through the outermost buoy or other aid to navigation of any system of aids, are inside waters

(285) Vessels proceeding directly from points outside Alaska inside waters to an established pilot boarding station or pickup point are excluded from compulsory use of a pilot when traveling specified inside exclusion routes.

(286) The inside exclusion routes for South central Alaska are as follows:

(287) (1) travel via Prince William Sound to the Cordova Pilot Station 2 miles S of Sheep Point at about (60 °35'N., 146°00'W.);

(288) (2) travel via Prince William Sound to the Valdez and Whittier Pilot Station about 3.6 miles **246** ° from Bligh Reef Lighted Bell Buoy 6 (60°50.5'N., 146°54.4'W.);

(289) (3) travel via Cook Inlet to the Homer Pilot Station 1 mile S of Homer Spit Light (59°36.0'N., 151°24.6'N.);

(290) (4) travel to Kodiak or Womens Bay Pilot Station 2 miles, **100**° from St. Paul Harbor Entrance Light at about 57°44.3'N., 152 °25.2'W. without transiting Whale Passage.

(291) Southeast Alaska Pilots Association and Alaska Coastwise Pilots Association serve Yakutat Bay and all ports S to the Canadian border. Yakutat Bay is

discussed in this text. Ports S of Cape Spencer are discussed in Coast Pilot 8. (See Yakutat Bay, chapter 4, for detailed pilotage information for that area.)

(292) The Southwest Alaska Pilots Association's main office is P.O. Box 977, Homer, AK 99603, telephone 907-235-8783, FAX 907-235-6119, cable address SWAPILOT HOMER, radio call KCE-203. The Homer office monitors VHF-FM channels 16 and 10, 24 hours daily.

(293) The other office is P.O. Box 869, Valdez, AK 99686, telephone 907-835-2134, FAX 907-835-5372, radio call WAB-982. The "EMERALD ISLAND" monitors channels 16 and 13, 24 hours daily.

(294) Southwest Alaska Pilots Association provides pilot service to all ports W of 141 °W. The major ports served include, but are not limited to, all Cook Inlet ports; all Kodiak Island ports; all Prince William Sound ports, including Valdez, Cordova, and Whittier; Resurrection Bay including Seward; and all Alaska Peninsula ports to 156 °W.

(295) The Homer pilot boats are the "MARY DELE": a 42-foot trawler, green hull, red and white deckhouse, and the word Pilot forward; and the "KATMAI": a 55-foot aluminum boat, and the word Pilot forward. The pilot boat and/or the Homer office monitors channels 16 and 10, 24 hours daily. Contact the pilot boat directly or through the Homer office.

(296) The Valdez pilot station is the "EMERALD ISLAND"; 91 feet long with black hull, white house. "EMERALD ISLAND" monitors channels 16 and 13, 24 hours daily. Contact her directly. The Valdez pilot boats include: the "COLUMBIA", a 61-foot aluminum boat; the "SILVER BULLET", a 31-foot aluminum launch; and the "BARANOF II", a 43-foot trawler with a red hull and white house; all have the word Pilot forward.

(297) The pilot boats for other South central Alaska ports can be contacted by calling "SEWARD PILOT BOAT" or "KODIAK PILOT", etc., on VHF-FM channel 16 or on a prearranged frequency between pilot and agent/vessel.

(298) Pilot services should be arranged in advance through ship's agents, or otherwise, in sufficient time to enable the pilot to travel to the area where the service is required. The State of Alaska requires a 36-hour notification for these pilots.

(299) The established pilot boarding stations or pickup points for South central Alaska are as follows:

(300) (1) Icy Bay-about 9 miles S of Claybuff Point at about 59°49'N., 141 °35'W.

(301) (2) Cordova-2 miles S of Sheep Point at about 60°35'N., 146°00' W.

(302) (3) Valdez-3.6 miles, **246°** from Bligh Reef Lighted Bell Buoy 6 at about 60 °50.5'N., 146°54.4'W.;

(303) (4) Whittier-pilot boarding station is the same as for Valdez.

(304) (5) Seward 1.1 miles, **152°** from Caines Head Light at about 59 °59.0'N., 149°23.3'W.

(305) (6) Cook Inlet-1 mile S of Homer Spit Light at about 59°36.0'N., 151 °24.6'W.

(306) (7) Kodiak or Womens Bay-2 miles, **100°** from St. Paul Harbor Entrance Light at about 57 °44'N., 152°22'W.

(307) (8) Discoverer Bay-2 miles N of Posliedni Point at about 58°28'N., 152 °20'W.

(308) (9) Port Wakefield-1 mile, **298°** from Kekur Point at about 57 °52'N., 152°49'W.

(309) (10) Port Bailey-1.5 mile N of Dry Spruce Bay Entrance Light at about 57°59'N., 153°06'W.

(310) (11) Uganik Bay-2 miles, **248°** from East Point at about 57° 51'N.,153°32'W.

(311) (12) Larsen Bay-1 mile E of Harvester Island at about 57°39'N., 153° 57'W.

(312) (13) Alitak Bay-2.4 miles, **131°** from Cape Alitak at about 56 °49'N., 154°15'W.

(313) (14) Old Harbor-1 mile, **082°** from Cape Liakik at about 57° 07'N., 153°25'W.

(314) Alaska Marine Pilots, P.O. Box 730, Dutch Harbor, AK 99692, telephone 907-581-1240, FAX 907-581-1372, radio call KBK-383, also provides pilotage in western Alaska. The pilot office, Dutch Harbor, monitors VHF-FM channel 16 and 4125.0 kHz, daily 24 hours.

(315) The Alaska Marine Pilots provide extensive pilot service to all ports from 156° W through the Alaska Peninsula and Aleutian Islands, thence N to Bristol Bay and N regions through the Arctic Ocean to Demarcation Point. The major ports served include but are not limited to Chignik, Sand Point, King Cove, Akutan, Dutch Harbor, Captains Bay, Atka, Adak, Port Moller, Naknek, Dillingham and Togiak. The established pilot boarding stations or pickup points for Western Alaska are as follows:

(316) (1) Cold Bay-about 3 miles S of Cold Bay Channel Lighted Buoy 1 (55°05.5 'N., 162°31.9'W.).

(317) (2) Dutch Harbor-about 1 mile E of Ulakta Head Light (53°55.5'N., 166° 30.5'W.).

(318) (3) Adak-about 2 miles E of Gannet Rocks Light 4 (51°52.0'N., 176° 36.5'W.).

(319) (4) Chignik-about 1 mile N of Chignik Spit Light (56°18.6'N., 158°23.0'W.).

(320) (5) Sand Point-Squaw Harbor-about 2.5 miles S of Popof Head (55°14.7' N., 160°20.0'W.).

(321) (6) King Cove-about 1 mile SE of Morgan Point Light (55°02.4'N., 162°20.2'W.).

(322) (7) False Pass-Isanotski Strait-about 1.5 miles NW of Ikatan Point (54°46.5'N., 163°11.0'W.).

(323) (8) Akutan-about 1 mile E of Akutan Point (54°08.7'N.,165°43.6'W.).

(324) (9) Attu-Navy Cove-about 1.3 miles S of Murder Point (52°47.7'N., 173°11.7'E.).

(325) (10) St. Paul Island-about 4 miles W of Reef Point (57°06.5'N., 170°17.7'W.).

(326) (11) Port Moller-Herendeen Bay-about 7.5 miles NW of Entrance Point (55°59.5 'N., 160°34.6'W.).

(327) (12) Port Heiden-about 7 miles WNW of Christiakof Island (56°55.8'N., 158°42.8'W.).

(328) (13) Ugashik Bay-about 0.5 mile W of Smoky Point (57°39.0'N., 157° 42.0'W.).

(329) (14) Egegik-about 7 miles W of Red Bluff Daybeacon (58°14.1'N., 157°29.1'W.).

(330) (15) Naknek-about 9 miles WSW of Naknek Light (58°42.4'N., 157°05.0 'W.).

(331) (16) Nushagak Bay-close aboard Nushagak Bay Entrance Buoy 2 (58°33.7'N., 158°24.3'W.).

(332) (17) Kulukak Bay-about 3 miles S of Kulukak Point (58°51.0'N., 159°36.0'W.).

(333) (18) Togiak-about 1 mile S of Summit Island (58°50.0'N., 160°12.0 'W.).

(334) (19) Goodnews Bay-about 7.5 miles SW of Platinum (59°01.0'N., 161° 49.4'W.).

(335) The Alaska Marine Pilots pilot boats can be contacted by calling "DUTCH HARBOR PILOT BOAT, " etc., on VHF-FM channel 16 or on a prearranged frequency between pilot and agent/vessel. When engaged in pilotage duties they display the appropriate day and night signals.

(336) Pilot services should be arranged in advance through ship's agents or otherwise, in sufficient time to enable the pilot to travel. The State of Alaska requires a 48-hour notification for these pilots.

(337) During times of frequent vessel movements, Alaska Marine Pilots station resident pilots in locations convenient to shipping activity to eliminate much of the detention which can occur due to inclement weather and limited transportation common to the area. These locations include but are not limited to Sand Point, King Cove, Port Moller, False Pass, Bristol Bay and Togiak. Contact Alaska Marine Pilots, Dutch Harbor, for current resident pilot locations.

Towage

(338) Tugs are stationed at Anchorage, Homer, Seward, Valdez, Whittier, and Kodiak. Navy tugs are stationed at Adak. At other places any towing that is required is done by cannery tenders and other local small craft. Much of the cargo traffic between Washington State and Alaska is by barges and tugs.

Vessel Arrival Inspections

(339) Vessels subject to U.S. quarantine, customs, immigration, and agricultural quarantine inspections generally make arrangements in advance through ships' agents. Government officials conducting such inspections are stationed in most major ports. Mariners arriving at ports where officials are not stationed, should contact the nearest activity providing that service. (See appendix for addresses.) Unless otherwise directed, officials usually board vessels at their berths.

Harbormasters

(340) **Harbormasters** are mentioned in the text when applicable. They generally have charge of the anchoring and berthing of vessels.

Supplies

(341) Provisions and fuel are generally obtained by vessels prior to departure for western Alaska. Provisions and limited amounts of marine supplies are available at the principal towns in Alaska, and nearly all of the canneries can supply some provisions.

(342) Water is available at most of the ports and canneries, and gasoline, diesel fuel, and lubricating oils are available in all the larger towns and at many of the canneries in western Alaska.

Repairs

(343) There are no repair facilities for large vessels in south central or western Alaska. The nearest major facilities are in British Columbia and Washington. However, moderate-sized vessels can be lifted out at Seward, and most principal ports do have facilities for minor emergency repairs to machinery, engines, and small boats.

(344) Some of the ports and canneries have small marine railways, slipways, or grids, but these are subject to frequent change due to destruction from ice, abandonment of canneries, or discontinuance of service.

Communications

(345) Air service is available to most major ports in South central and Western Alaska, with connections to nearly every community in the State.

(346) Alaska State ferries maintain scheduled service between the cities of Whittier, Valdez, Cordova, Seward, Homer, Kodiak, and down the Alaska Peninsula to Dutch Harbor. The Alaska Highway System connects most principal towns in South central Alaska (Anchorage, Kenai, Nikiski, Homer, Seward, and Valdez) with each other, Fairbanks and AlCan (Alaska Canadian Highway) thence the conterminous United States.

(347) Telephone service is available from most communities in Prince William Sound, Cook Inlet, and Kodiak Island.

(348) AT&T Alascom operates a radio network that includes coast stations with ship-to-shore service throughout most of Alaska. Complete information on

this service can be obtained from AT & T Alascom, Office of External Affairs, 210 E Bluff Dr., Anchorage, AK 99501 or by calling their Customer Service Department at 800-252-7266.

Reporting Marine Emergencies and Oil Spills

(349) Marine emergencies, oil spills, possible illegal entry, sightings of foreign naval or fishing vessels, icebergs, submarines, or any other unusual events should be reported to the nearest Coast Guard unit by radio or by calling, toll free, 800-478-5555 anywhere in Alaska except Juneau, Douglas, or Kodiak. Within these cities, call 463-2000 for Juneau/Douglas, and 487-5888 for Kodiak.

Rescue Coordination Centers

(350) There are three Rescue Coordination Centers in Alaska. The centers depend on information from many sources in order to perform effectively. Mariners are requested to report any information to the nearest center concerning fire, collision or other emergencies, foreign fishing vessels, oil spills, possible illegal entry, submarine sightings, icebergs, foreign naval vessels, or any unusual sightings. (See the appendix for the location of the centers.)

Small-craft facilities

(351) **Small-craft facilities** are limited in Alaska. In general, only the larger communities have gasoline, diesel fuel, berths, marine supplies, and limited repair facilities. Services and supplies available at these facilities are described under the communities concerned.

(352) **A vessel of less than 65.6 feet (20 meters) in length or a sailing vessel shall not impede the passage of a vessel that can safely navigate only within a narrow channel or fairway. (Navigation Rules, International-Inland Rule 9(b).**

Standard time

(353) All of Alaska E of 169°30'W. uses Alaska standard time (Ak.s.t.), which is 9 hours slow of Greenwich mean time. Example: when it is 1200 at Greenwich, it is 0300 in Juneau and Anchorage. All the Aleutian Islands W of 169 °30'W., including the communities of Adak, Atka, Attu, and Shemya, use **Hawaii-Aleutian Standard time (H.A.s.t.)**, which is 10 hours slow of Greenwich mean time. Example: when it is 1200 at Greenwich, it is 0200 at Adak.

Daylight saving time

(354) In Alaska clocks are advanced 1 hour on the first Sunday in April and are set back to standard time on the last Sunday in October.

Legal public holidays

(355) The following are legal holidays in the area covered by this Coast Pilot: New Year's Day, January 1; Martin Luther King, Jr.'s Birthday, third Monday in January; Washington's Birthday, third Monday in February; Memorial Day, last Monday in May; Independence Day, July 4; Labor Day, first Monday in September; Columbus Day, second Monday in October; Veterans Day, November 11; Thanksgiving Day, fourth Thursday in November; and Christmas Day, December 25. The national holidays are observed by employees of the Federal Government and the District of Columbia, and may not be observed by all the States in every case.

(356) In addition the following holidays are also observed in the area covered by this Coast Pilot: Seward's Day, last Monday in March; Alaska Day, October 18.